

REMARKS

Claim 35 was objected to because of informality. The Claim has been amended according to the suggestion of the Examiner. It is noted that this Claim 35 is considered by the Examiner to present allowable subject matter (i.e., it was merely objected to). Applicants believe Claim 38 should have been indicated as allowable for the same reason as Claim 35, by the way.

Claims 34, 35, 37 and 38 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,838,946 to Schall ("Schall"). For Schall to anticipate Claims 34, 35, 37 and 38, the reference must show each limitation of the claims.

Schall is a double acting air-pressure actuated diaphragm pump (Abstract). A flanged connecting member (12) interconnects a pair of pump bodies (10 and 11). A rod passes through the flanged connecting member which is sealed at each end by seals 39a and 38a. Each pump body is formed of an inner and an outer housing section formed of two hemispherical parts. Between the paired hemispherical parts is sandwiched a diaphragm dividing each pump body into a pumping chamber and a pump actuating chamber.

In contrast, the present claims recite first and second housing parts which assemble to provide an interior space adapted to contain pump mechanism components. Schall does not teach any two elements which assemble together to form an interior space adapted to contain pump mechanism components. In fact, Schall shows at least five parts which must be assembled together (14, 13, 12, 22 and 23) just to house the rod 37 and two diaphragms. The rest of the mechanism (valves and so on) is shown as being contained within a number of housings (V1 and V2).

Schall does not show diaphragms *integrally* mounted with respective first and second parts as claimed in the present application. Schall shows diaphragms, each respectively held by being pressed between two parts, 13, 14 and 22, 23, and not integrally formed with any of these parts.

In contrast, the present application sets forth that each diaphragm is formed integral with respective first and second parts. This is done by, for example, molding the diaphragm integrally with the puller (p. 9, line 22). Schall lacks the first and second parts of the present claims and does not form integrally diaphragms with any part. Thus, for at least the above reasons, Schall cannot anticipate the present claims.

Claims 32, 36 and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Schall in view of U.S. Patent No. 4,508,011 to Nolden ("Nolden"). Schall is distinguished above and further does not teach or suggest noise reduction materials or a need for sound reduction. Nolden is cited by the Examiner in combination with Schall, but Nolden does not supply the deficiencies of Schall or a motivation to modify Schall to arrive at the present invention.

Nolden is directed to noise reduction in hydraulic powered systems including a hydraulic axial piston machine. One of the major drawbacks with hydraulic powered systems is the disturbing noise level. A main source of noise is the hydraulic pump. The noise is mainly created by the large alternating forces inside the pump, but also by the pump generated flow ripple. There are two different kinds of flow ripple. The first kind is the kinematic flow ripple, which is caused by the limited numbers of pistons. The other kind is the dynamic flow ripple, due to the compressibility of the fluid. The compressibility effects are obvious when the fluid is subjected to large alternating pressure, which is the case for hydraulic pumps. In a system, the flow ripple transforms to pressure ripple, which creates noise.

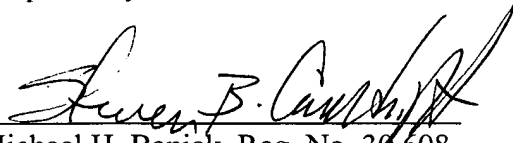
Nolden generates noise through large alternating forces of hydraulic fluid and at least flow ripple inside a hydraulic pump. In contrast, the present device involves the production of an alternating negative air pressure (not pumping pressure or hydraulic) and clearly is not subject to the same noise generating elements, conditions or forces as in a hydraulic pump. In view of the extremely divergent operating conditions and forces in a hydraulic pressure-producing pump verses a breast pump, which produces air pressure changes there is no suggestion to look to Nolden when seeking to reduce noise in a breast pump, and therefore, Nolden is clearly non-analogous prior art. Nolden should be removed as a reference.

Even if one were to combine Schall and Nolden, there is still no suggestion to apply the references to a breast pump as claimed in the present claims. Therefore, Schall and Nolden cannot render the present claims obvious.

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Reply to Office Action of May 6, 2004

Applicants request reconsideration of pending Claims 32-39 and issuance of a Notice of Allowance. If for any reason the Examiner is unable to allow the case, the Applicants request that the Examiner please contact Applicants' attorney at (312) 673-0360.

Respectfully submitted,



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